

Exterior Stone Conservation Study

Independence National Historical Park
National Park Service
Department of the Interior



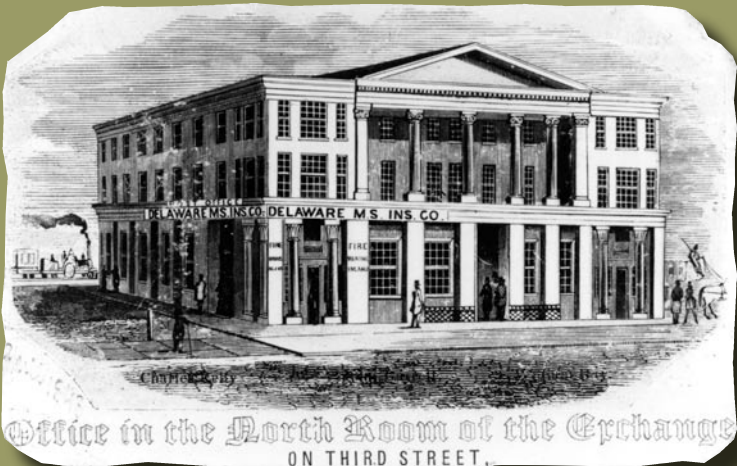
MERCHANT'S EXCHANGE BUILDING

Study of the Pennsylvania Blue Marble buildings of Independence National Historical Park requires several phases of research including archival documentation, condition survey and recording, laboratory and field material analysis, and testing of proposed treatment interventions. Components of this research have been underway since 1996; however, Phase I of the current program has begun with a survey of the exterior marble masonry using a detailed condition glossary developed specifically for the Pennsylvania Blue Marble buildings.

This first phase of the process is presently being carried out on the Merchant's Exchange building. All existing building conditions are recorded on site by team members who are familiar with the glossary. This data is recorded by hand on printed drawings each of which represent only a small portion of the facade.

Following the field survey, digitization is a three-step process using Photoshop, AutoCAD, and ArcView software. All field drawings are scanned, rectified and montaged in Photoshop for each respective elevation and then imported and digitized in AutoCAD. This method guarantees a relatively high level of accuracy for conditions recording. ArcView then allows an in-depth study of correlations between conditions to determine spatial relationships. From this the GIS software can be used to help predict where future deterioration might occur.

Previous testing of the Pennsylvania marble at the Second Bank was done for portions of graduate theses in 1996 by Jocelyn Kimmel, and at the First Bank in 1998 by Guy Munsch, and at the Merchant's Exchange as part of a multi-year Conservation Strategy (Brookover, McGee, Mossotti, Dolske and Sherwood, 1992). Further analysis and testing will proceed upon completion of the exterior conditions survey. Testing as required to evaluate specific treatment and repair strategies is also underway including recent design and testing of pinning systems for spalling by John Glavan in 2004.



PARK MISSION:
The National Park Service cares for special places saved by the American people so that all may experience our heritage.

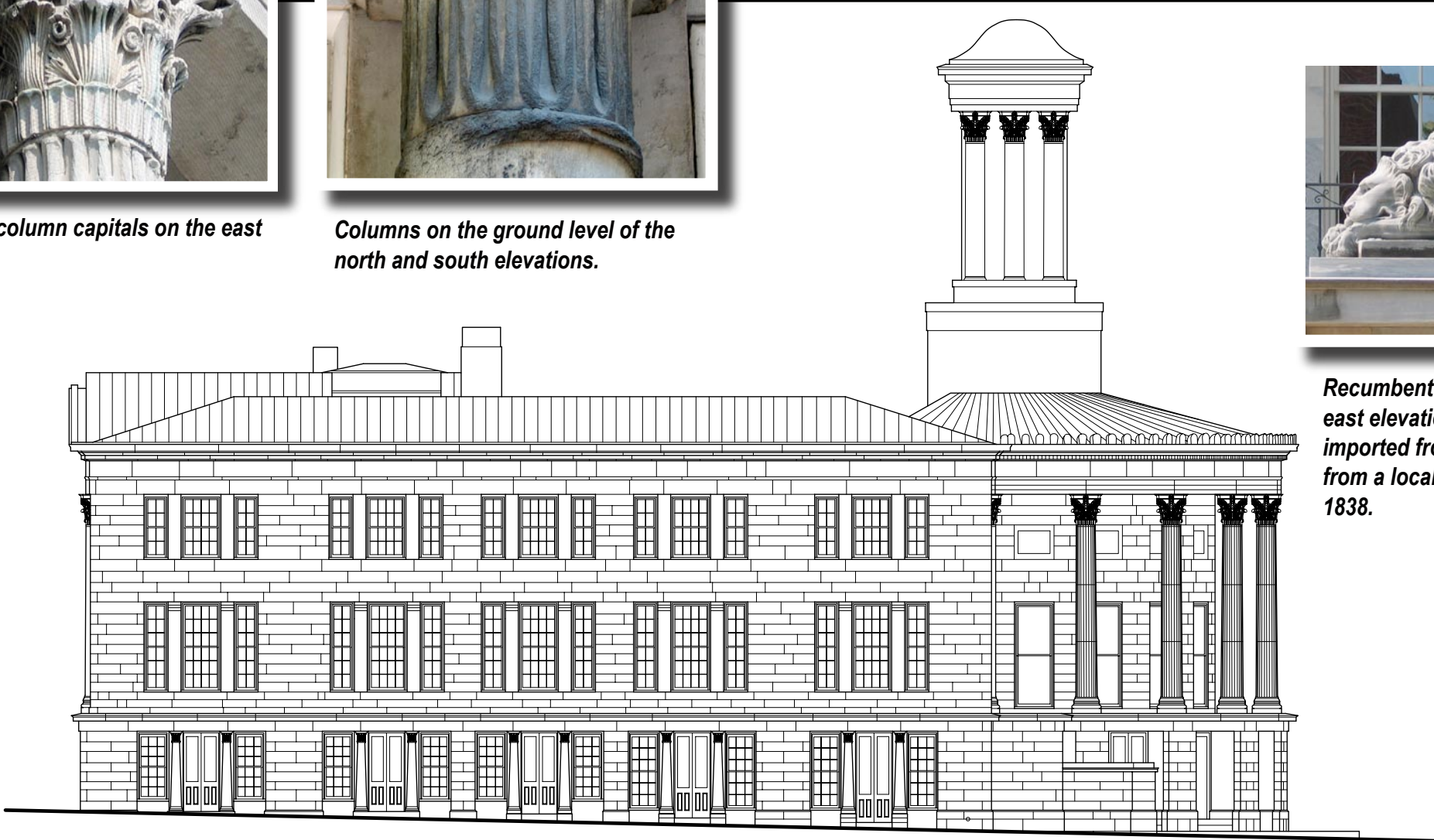
This work is funded directly by visitor fees collected in national parks



Corinthian column capitals on the east portico.



Columns on the ground level of the north and south elevations.



Recumbent lions on the east elevation which were imported from Italy, a gift from a local merchant in 1838.



Members of the University of Pennsylvania assessment team working on the south elevation.



Elevation of the South Facade

Stone Blistering (far left) and staining and microflora (right) are only two of the conditions which exist on the building.

For additional information on the history of the building please visit our public gallery located on the first floor of this building just inside the main entrance.